Analysis of Seismic Events in and Near Kuwait

A.J. Rodgers
S.D. Ruppert
D.B. Harris
K.M. Mayeda

May 11, 1999

This is an informal report intended primarily for internal or limited external distribution. The opinions and conclusions stated are those of the author and may or may not be those of the Laboratory.

Work performed under the auspices of the U.S. Department of Energy by the Lawrence Livermore National Laboratory under Contract W-7405-ENG-48.
DISCLAIMER

This document was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor the University of California nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or the University of California. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or the University of California, and shall not be used for advertising or product endorsement purposes.

This report has been reproduced
directly from the best available copy.

Available to DOE and DOE contractors from the
Office of Scientific and Technical Information
P.O. Box 62, Oak Ridge, TN 37831
Prices available from (423) 576-8401

Available to the public from the
National Technical Information Service
U.S. Department of Commerce
5285 Port Royal Rd.,
Springfield, VA 22161
Analysis of Seismic Events in and Near Kuwait

Arthur J. Rodgers, Stanley D. Ruppert, David B. Harris and Kevin M. Mayeda

Lawrence Livermore National Laboratory
Earth and Environmental Sciences Directorate
Geophysics and Global Security Division

Seismic data for events in and around Kuwait were collected and analyzed. We estimated event moment, focal mechanism and depth by waveform modeling. Results showed that reliable seismic source parameters for events in and near Kuwait can be estimated from a single broadband three-component seismic station. This analysis will advance understanding of earthquake hazard in Kuwait.

(left) Map of Kuwait Seismic Network and events analyzed.

(below) Waveform fits (data in blue, synthetic in red) for the 97364 Kuwait event (left) and the 98317 Zagros earthquake (right).

97364 event $\Delta = 40$ km

\begin{figure}
\centering
\includegraphics[width=\textwidth]{97364_waveform.png}
\caption{Waveform for the 97364 event.}
\end{figure}

98317 event $\Delta = 599$ km

\begin{figure}
\centering
\includegraphics[width=\textwidth]{98317_waveform.png}
\caption{Waveform for the 98317 event.}
\end{figure}

80 seconds

400 seconds